

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF HAWAII

In the Matter of the Application of)

HAWAIIAN ELECTRIC COMPANY, INC. )

DOCKET NO. 03-0362

For Approval to Commit Funds )  
in Excess of \$500,000 for )  
Item P0000493, the Waiau 6 HP )  
Turbine Blading. )

DECISION AND ORDER NO. 20789

DIV. OF CONSUMER ADVOCACY  
DEPT. OF COMMERCE AND  
CONSUMER AFFAIRS  
STATE OF HAWAII

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Karen Higashi  
Chief Clerk of the Commission

ATTEST: A True Copy  
KAREN HIGASHI  
Chief Clerk, Public Utilities  
Commission, State of Hawaii.

K. Higashi

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DECISION AND ORDER

I.

Application

HAWAIIAN ELECTRIC COMPANY, INC. ("HECO") filed an application on October 6, 2003, requesting commission approval to commit approximately \$2,366,337 for Item P0000493, the Waiau 6 HP Turbine Blading project ("Proposed Project"). HECO's request is made pursuant to section 2.3.g.2 of the commission's General Order No. 7, Standards for Electric Utility Service in the State of Hawaii ("G.O. No. 7").

On October 30, 2003, the commission issued information requests ("IRs") to HECO. HECO filed responses to the commission's IRs on December 3, 2003.

HECO served copies of the application on the DIVISION OF CONSUMER ADVOCACY, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS ("Consumer Advocate"). On November 4, 2003, the Consumer Advocate issued its IRs to HECO, to which HECO responded by responses filed on December 16, 2003. Additionally, on December 23, 2003, HECO

provided confidential responses to the Consumer Advocate's IRs 11 and 12, pursuant to Protective Order No. 20725, filed on December 19, 2003 in this docket.

HECO filed a letter on December 19, 2003 requesting an extension of the G.O. No. 7 section 2.3.g.2 requirement that the commission "render a decision within 90 days of filing by the utility" ("90-day Period"), until February 3, 2004.<sup>1</sup> Order No. 20744, filed on January 8, 2004, granted HECO's request for an extension of the 90-day Period, to February 3, 2004.

On January 7, 2004, the Consumer Advocate transmitted informal IRs via e-mail to HECO, to which HECO filed responses on January 12, 2004. On January 21, 2004, the Consumer Advocate submitted its Statement of Position ("SOP") in which it stated that it did not object to the commission's approval of the instant application.

## II.

### Background

Waiau Unit 6 ("Waiau 6") is a nominal 50 megawatts non-reheat steam unit commissioned in 1961. It is one of four cycling units currently in operation at the Waiau Generating Station. Waiau 6 starts every morning prior to the morning peak and shuts down following the evening peak, and is also run as system requirements dictate.

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<sup>1</sup>Pursuant to G.O. No. 7 section 2.3.g.2, the 90<sup>th</sup> day from the filing of the instant application is January 4, 2004.

Waiau 6 consists of a two cylinder, tandem-compound condensing steam turbine. The exhaust opening of the High Pressure ("HP") turbine is at the top of the cylinder and the steam passes into the Low Pressure ("LP") turbine through a crossover pipe. The HP and LP turbine rotors are connected to the generator rotor, which provides the rotating magnetic field required to generate electrical power.

An inspection of the Waiau 6 turbine blades by HECO in 2001 showed deterioration damage to the blades.<sup>2</sup> This type of damage, i.e., penetration corrosion pitting, was judged not repairable.<sup>3</sup> Based upon this inspection and resultant determination of damage, HECO anticipates the scope of work for the Proposed Project to be the replacement of (1) rows 10 through 15 of the rotating blades and (2) 22 rows of stationary stator blades. HECO states that this type of damage to the blades is not repairable and that the blades need to be replaced.<sup>4</sup> HECO proposes to commit funds

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<sup>2</sup>See HECO's responses to the Consumer Advocate's IRs ("Response to Consumer Advocate IRs"), CA-IR-3a.

<sup>3</sup>Corrosion occurs when salt water, used as a cooling medium, gets into the condenser system through tube leaks. Chlorides present in the salt water exceed normal control limits and migrate into the steam turbine. Visual inspections have identified corrosive elements in the turbine rotor and stationary blades. Over time, the leaked chloride breaks down the metal composition of the blades. See HECO's responses to the commission's IRs, PUC-IR-105.

<sup>4</sup>See Response to Consumer Advocate IRs, CA-IR-3b.

for this project with the issuance of purchase orders for long-lead material items in February 2004.<sup>5</sup>

### III.

#### Consumer Advocate

In evaluating HECO's application, the Consumer Advocate considered whether (1) there is a continued need for the generation of power from Waiau 6 and (2) the estimated project costs are reasonable.

#### A.

##### Whether there is a Continued Need for Generation from Waiau 6

The Consumer Advocate notes that the new turbine blades are expected to last until the Waiau 6 retirement review date of 2035 and that the proposed project appears consistent with HECO's plans to keep the Waiau 6 in service until the end of the unit's estimated service life.<sup>6</sup> It is concerned, however, about additional capital improvement projects required to keep Waiau 6 operating until 2035 and that HECO has not considered these additional capital costs in evaluating the cost-effectiveness of continued

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<sup>5</sup>Based on an estimated 28-32 week delivery schedule, replacement blades will need to be ordered by February 2004. HECO notes that this delivery schedule is longer than for other comparable recent maintenance projects for three reasons: (1) the number of rows of stationary stator blades needing replacement (22) require a longer manufacturing time; (2) replacement blades will be manufactured during the manufacturing "off-season", giving HECO a lower replacement cost; and (3) the longer manufacturing period will allow the replacement blades to be made from a stronger steel material, at no additional cost to HECO. See Application at 3.

<sup>6</sup>See SOP at 6.

operation of Waiau 6.<sup>7,8</sup> Rather than raise objections at this time, the Consumer Advocate asserts that its concerns are more appropriately addressed in HECO's Third Integrated Resource Plan that is the subject of Docket No. 03-0253, opened on September 11, 2003. The Consumer Advocate, thus, reserves its right to revisit the issue of additional future capital improvement projects affecting older generating units in future applications.

B.

Whether the Estimated Project Costs are Reasonable

The Consumer Advocate does not object to the estimated project costs as described in HECO's instant application. It advises, however, that as the winning vendor quote for the Proposed Project has expired, the quote is subject to change, and, thus, the Consumer Advocate cannot reliably assess the reasonableness of the estimated project costs as stated in the instant application. Additionally, the Consumer Advocate has some concerns with the "Outside Services", i.e., Allowance for Funds Used During Construction and ON-COST costs, but recognizes that these cost items can be pursued at the time that the final cost report is submitted, or in HECO's next rate proceeding. As such, the

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<sup>7</sup>Id.

<sup>8</sup>In response to the Consumer Advocate's inquiry in its IRs, HECO points to its Integrated Resource Plan, 1998-2017, Docket No. 95-0347, filed on November 11, 1995, which concluded that the cost of replacement generation is significantly higher than the cost of maintaining existing generation. See Response to Consumer Advocate IRs, CA-IR-11b.

Consumer Advocate does not object to the estimated costs for the Proposed Project.

#### IV.

##### Findings and Conclusions

Upon a careful review of HECO's application, including its responses to the commission's and Consumer Advocate's IRs, and the Consumer Advocate's SOP, we find the Proposed Project to be reasonable and in the public interest. Failure to replace the corroding blades could result in a failure of the HP sector and cause an extended forced outage of Waiau 6 for approximately two years. This could adversely impact system reliability and affect scheduled maintenance on other units. We, thus, conclude that HECO's application to commit funds for the Proposed Project should be approved.

#### V.

##### Orders

###### THE COMMISSION ORDERS:


1. HECO's application, filed on October 6, 2003, to commit an estimated \$2,366,337 for Item P0000493, the Waiau 6 HP Turbine Blading project, in accordance with section 2.3.g.2 of G.O. No. 7, is approved; provided that no part of the cost of the Proposed Project may be included in HECO's rate base unless and until the Proposed Project has been completed, and the Proposed Project is used and useful for utility purposes.

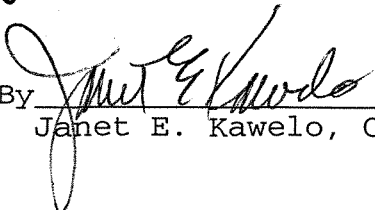
2. HECO shall submit a report within 60 days of the completion of the Proposed Project, with an explanation of any deviation of 10 per cent or more in the Proposed Project's cost from that estimated in the application. Failure to submit the report, as requested by this decision and order, will constitute cause to limit the cost of the project, for ratemaking purposes, to that estimated in the instant application.

DONE at Honolulu, Hawaii this 2nd day of February, 2004.

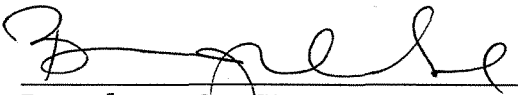
PUBLIC UTILITIES COMMISSION  
OF THE STATE OF HAWAII

By   
Carlito P. Caliboso, Chairman

By   
Wayne H. Kimura, Commissioner

By   
Janet E. Kawelo, Commissioner

APPROVED AS TO FORM:

  
Benedyne S. Stone  
Commission Counsel

03-0362.sl



CERTIFICATE OF SERVICE

I hereby certify that I have this date served a copy of the foregoing Decision and Order No. 20789 upon the following parties, by causing a copy hereof to be mailed, postage prepaid, and properly addressed to each such party.

DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS  
DIVISION OF CONSUMER ADVOCACY  
P. O. Box 541  
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Karen Higashi

DATED: February 2, 2004